CLAIMS

What is claimed is:

1. A printer to output motion picture data, comprising:

an interface unit connectable with an external device to receive frames that are successively input from the external device according to the motion picture data;

an image extracting unit to extract at least one key frame from the frames input through the interface unit, the key frame representing the motion picture data; and

a controller to control the image extracting unit to extract the at least one key frame to represent the motion picture data upon determining that the motion picture data is received through the interface unit.

2. The printer of claim 1, further comprising:

a print engine unit to print data; and

an image processor to convert key frame data corresponding to the key frame extracted by the image extracting unit into image data that can be printed in the print engine unit.

3. The printer of claim 1, wherein the image extracting unit compares a current frame that is input through the interface unit with a reference frame, calculates a comparison result, compares the comparison result with a predetermined threshold value, and extracts the current frame as the key frame that represents the motion picture data when the comparison result is greater than the predetermined threshold value.

4. The printer of claim 3, wherein the reference frame is one of a preceding frame of the current frame and a preceding key frame that is extracted previously.

5. A control method used with a printer outputting motion picture data, the printer connected with an external device through an interface unit to print out the motion picture data input from the external device, the control method comprising:

receiving data to be printed from the external device through the interface unit;

determining whether the data received through the interface unit is the motion picture data;

extracting a key frame from frames that are successively input according to the motion picture data upon determining that the data is the motion picture data, the key frame that represents the motion picture data;

converting key frame data corresponding to the extracted key frame into image data; and

printing out the converted image data on a printing paper.

6. The control method of claim 5, wherein the extracting of the key frame comprises:

comparing a current frame of the motion picture data that is input through the interface unit with a reference frame to calculate a comparison result; and

comparing the comparison result with a predetermined threshold value to extract the current frame as the key frame that represents the motion picture data when the comparison result is greater than the predetermined threshold value.

7. The control method of claim 6, wherein the reference frame is one of a preceding frame of the current frame and a preceding key frame that is extracted previously.

8. A printer comprising:

an interface unit connectable to an external device to receive motion picture data having frames from the external device; and

an image extracting unit to extract one or more key frames from the frames according to a difference between the frames, the one or more key frames representing the frames of the motion picture data so that data corresponding to the one or more key frames are printed.

9. The printer of claim 8, further comprising:

a printer engine unit to print the data on a printing paper.

10. The printer of claim 8, further comprising:

an input unit through which a signal corresponding to the number of the one or more key frames is inputted to the image extracting unit, wherein the image extracting unit extracts the one or more key frames according to the signal.

11. The printer of claim 8, wherein the image extracting unit extracts a predetermined number of the one or more key frames from the frames, and the predetermined number is equal to or less than the number of the frames.

12. The printer of claim11, wherein the predetermined number of the one or more key frames and the number of the frames are constant.

13. The printer of claim 11, wherein the predetermined number of the one or more key frames and the number of the frames are variable.

14. The printer of claim 11, wherein the predetermined number is set before the motion picture data is inputted to the interface unit.

15. The printer of claim 11, wherein the image extracting unit re-extracts a number of sub-key frames from the predetermined number of the one or more key frames to be printed.

16. The printer of claim 15, wherein the number of the sub-key frames and the number of the one or more key frames are constant.

17. The number of claim 15, wherein the number of the sub-key frames and the predetermined number of the one or more key frames are variable.

18. The printer of claim 15, wherein one of the number of the sub-key frames and the predetermined number of the one or more key frames is constant, and the other one of the number of the sub-key frames and the predetermined number of the one or more key frames is variable.

19. The printer of claim 8, further comprising:

a signal demodulating unit decompressing the motion picture data when the motion

picture data is a compressed format, and transmitting the de-compressed motion picture data to the image extracting unit in a frame unit to form the frames.

20. The printer of claim 19, further comprising:

a processor to convert the data corresponding to the one or more key frames into image data; and

a print engine unit printing the image data.

21. The printer of claim 20, wherein the data is an RGB color signal, and the image data in a YMCK color signal.

22. The printer of claim 8, further comprising:

a display unit displaying an image corresponding to respectively ones of the one or more key frames.

23. The printer of claim 8, further comprising:

a memory unit storing the one or more key frames.

24. The printer of claim 8, further comprising:

a controller controlling the image extracting unit to extract the one or more key frames from the frames according to the difference representing one of a first change between pixels of the frames, a second change between predetermined regions of the frames, and a third change between the frames.

25. The printer of claim 24, wherein each of the frames includes frame information representing at least one of a brightness and a motion vector, and the first, second and third changes are a change between the frame information of the frames.

26. The printer of claim 8, further comprising:

a controller controlling the image extracting unit to extract the one or more key frames from the frames according to the difference representing a change between brightness histograms corresponding to the respective frames.

27. The printer of claim 8, further comprising:

a controller controlling the image extracting unit to extract the one or more key frames from the frames according to the difference representing a change between frame header information of the frames.

28. The printer of claim 8, further comprising:

a controller controlling the image extracting unit to extract the one or more key frames from the frames of the moving picture data according to the difference representing a change from a first image extracting module to a second image extracting module wherein the first and second image extracting modules are used to extract to at least one key frame from the frames of the moving picture data.

29. A method used with a printer, the method comprising:

receiving motion picture data having frames from an external device connectable to the printer; and

extracting one or more key frames from the frames of the moving picture data according to a difference between the frames so that data corresponding to the one or more key frames is printed.